I. C. 6509

JUNE, 1931

DEPARTMENT OF COMMERCE

UNITED STATES BUREAU OF MINES
SCOTT TURNER, DIRECTOR

INFORMATION CIRCULAR

SURVEY OF CRACKING PLANTS
JANUARY 1, 1931

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G. R. HOPKINS

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DEPARTMENT OF COMMERCE - BUREAU OF MINES

SURVEY OF CRACKING PLANTS, JANUARY 1, 1931[1]

By G. R. Hopkins[2]

Introduction

According to reports as of January 1, 1931, the total daily charging capacity of the cracking plants, both completed and under construction, in the United States amounted to 1,950,781 barrels, an increase over the previous year of 14 per cent. The total daily capacity of the operating plants amounted to 1,594,990 barrels, or 82 per cent of the grand total, the capacity of the inoperative plants was 244,661 barrels, or 12 per cent of the total, while the capacity of the plants under construction amounted to 111,130 barrels, or 6 per cent. In comparison with a year ago, these data indicate a decline in the total capacity of the plants being built but show material increases in the capacity of both the other two classes. The increase in total inoperative capacity and the decline in construction in 1930 undoubtedly resulted from unsatisfactory economic conditions.

The total number of cracking units completed or under construction on January 1, 1931, totaled 1,868 as compared with 2,002 the previous year and with a high of 2,559 on June 1, 1926. During the period between June 1, 1926, and January 1, 1931, the total charging capacity of the cracking plants has more than doubled, but the number of units has shown a material decline. This condition has been brought about largely through the dismantling of many Burton stills of small capacity and through the tendency to increase the size of the new units. The largest unit that can be identified in this survey has a daily charging capacity of 10,000 barrels, but undoubtedly there are some that would exceed this in size.

Texas, with a total of 575,300 barrels, ranked far ahead of the other States in charging capacity, and was followed in order by California, Indiana, Oklahoma, and Pennsylvania. Indiana, with only five refineries, ranked third in cracking capacity, which illustrates the importance of the Chicago district as a gasoline-producing center. Not all of the States showed a gain in capacity during the year; in fact, four of them, namely Illinois, Louisiana, New York, and Oklahoma, reported a decline.

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1 The Bureau of Mines will welcome reprinting of this paper, provided the following footnote acknowledgment is used: "Reprinted from U. S. Bureau of Mines Information Circular 6509."

2 Economic analyst, U. S. Bureau of Mines.

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The production of gasoline by means of the cracking process has shown a steady increase since such statistics were first compiled (1925). In 1930 the production by this method amounted to 164,243,000 barrels, an increase over 1929 of 20,516,000 barrels, or 14 per cent. As the increase in total motor production in 1930 was only 0.5 per cent, the relative proportion of cracked gasoline rose from 33.0 per cent in 1929 to 37.7 per cent in 1930. In December, 1930, the ratio of cracked gasoline to the total reached 41.1 per cent, the first month that it had exceeded 40 per cent.

The Texas district led in the production of cracked gasoline in 1930, although the East Coast district retained first place from the standpoint of percentage, that is, in the proportion of cracked gasoline to the total. Nearly half of the gasoline produced by the refineries on the Atlantic seaboard is made by the cracking process. The production of cracked gasoline at California refineries showed a material increase in 1930, although the proportion to the total amounted to only 18 per cent, the lowest of any of the major refining districts. The Louisiana Gulf Coast district made the most notable gain in cracking activity; its percentage rose from 30 in 1929 to 45 in 1930.

Thirty-five different types of cracking processes are listed in this survey, as compared with 38 a year ago. Of the 35 types on January 1, 1931, only 6 were being actively licensed, 6 were in use at only a few refineries, several were practically obsolete but still in use, and a considerable number were being developed by one company. Where a cracking process is being developed by one company but no particular name has been assigned to it, the term "Own" is used. The number of processes being developed by one company has shown a rapid increase in the last few years. The development of pipe stills which can be used for either skimming or cracking indicates that the dividing line between these two refining methods will tend to disappear.

The year witnessed a further gain in importance of the vapor-phase method of cracking. The total daily capacity of the vapor-phase units completed or under construction rose from 30,650 barrels on January 1, 1930, to 45,600 barrels on January 1, 1931. The number of companies using this method rose from 10 to 13 in the same period.

The growth in the utilization of refinery or still gases was continued throughout 1930. A number of refineries installed vapor recovery systems to collect these gases, which had been going to waste. The major part of the gases recovered are treated in absorption plants and the gasoline obtained has constituted an appreciable item in the motor-fuel supply. The residue gas is turned into pipe lines or is used for fuel under boilers and stills. A material factor in the increased supply of refinery gas has been a gain in the use of vapor-phase cracking processes which produce large quantities of such gas. The increase in vapor-phase cracking has been due primarily to an increased demand for antiknock motor fuel, but it is probable that some installations have been influenced by the fact that there was a ready market for the gas. Complete information as to the production of gas by cracking plants is not available, but it is probable that the total output during 1930 amounted to approximately 200 billion cubic feet, an increase over 1929 of 15 per cent.

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RECAPITULATION BY TYPE OF PROCESS

Type of process	January 1, 1931		January 1, 1930	
	Total units	Total capacity, barrels per day	Total units	Total capacity, barrels per day
Black	12	16,000	12	16,000
Burton	793	164,249	895	171,440
Carborundum	1	3,000	1	3,000
Coil cracker	2	8,000	-	-
Continuous high-pressure	2	5,300	2	5,300
Controlled coil	2	4,500	-	-
Convertor	1	4,200	1	1,500
Cross	150	245,800	163	273,670
de Florez	6	13,550	1	1,200
Doherty	20	27,500	16	20,200
Donnelly	4	7,000	2	3,000
Dubbs	185	252,250	188	238,500
Fleming	2	800	8	2,700
Gyro	20	16,000	13	9,200
Holmes-Manley	115	233,900	129	240,800
Isom	115	179,150	100	100,000
Jenkins	46	66,150	49	75,000
Leamon	5	2,250	5	2,250
Lewis	4	6,200	4	6,200
Lientz	1	6,000	1	6,000
Link	22	46,000	20	50,000
Louisiana coil	5	7,100	-	-
Ormont	4	1,000	4	1,000
Own	166	168,000	186	151,600
Pipe stills	3	13,000	1	3,500
Pratt	2	2,500	1	500
Pressure coke	13	22,000	13	19,500
Richmond	2	6,400	2	6,000
Skelly-Rittman vapor-phase	2	2,500	-	-
Slagter	18	2,700	24	3,600
Snodgrass	14	4,972	24	5,680
True vapor-phase	2	3,600	2	10,500
Trumble	1	750	1	750
Tube-and-tank	118	385,460	123	260,100
Vapor-phase	3	4,200	3	6,000
Winkler-Koch	7	18,800	5	10,500
Other	-	-	3	4,350
Total	1,868	1,950,781	2,002	1,708,940

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RECAPITULATION BY YEARS

Year	Total units	Charging capacity, barrels per day			
		Operating	Shut down	Building	Total
June 1, 1925	2,527	690,492	26,200	116,000	832,692
June 1, 1926	2,559	844,800	47,690	47,600	940,090
Jan. 1, 1928	2,334	1,013,000	253,000	22,000	1,288,000
Jan. 1, 1929	2,205	1,194,501	147,923	134,450	1,476,874
Jan. 1, 1930	2,002	1,419,200	139,840	149,900	1,708,940
Jan. 1, 1931	1,868	1,594,990	244,661	111,130	1,950,781

RECAPITULATION BY DISTRICTS

District	Total units	Charging capacity, barrels per day			
		Operating	Shut down	Building	Total
East Coast	158	234,200	28,000	43,100	305,300
Appalachian ...	64	45,522	6,500	6,250	58,272
Ind.,Ill.,Ky., etc.	435	245,930	56,900	32,880	335,710
Okla.,Kans.,etc.	355	228,550	29,250	8,000	265,800
Texas	273	525,100	47,600	2,600	575,300
La. and Ark. ..	79	90,400	15,950	6,000	112,350
Rocky Mountain.	427	44,538	57,461	2,300	104,299
California	77	180,750	3,000	10,000	193,750
U. S., total.	1,868	1,594,990	244,661	111,130	1,950,781
Texas Gulf Coast	203	434,700	33,600	2,600	470,900
La. Gulf Coast.	39	64,000	3,000	6,000	73,000

RECAPITULATION BY STATES

State	Total units	Charging capacity, barrels per day			
		Operating	Shut down	Building	Total
Arkansas	25	8,900	8,550	-	17,450
California	77	180,750	3,000	10,000	193,750
Colorado	12	2,322	548	800	3,670
Georgia	2	3,600	-	-	3,600
Illinois	114	78,200	11,000	2,500	91,700
Indiana	252	126,850	45,900	13,000	185,750
Iowa	1	-	1,000	-	1,000
Kansas	87	93,700	10,850	-	104,550
Kentucky	37	15,480	-	2,380	17,860
Louisiana	54	81,500	7,400	6,000	94,900
Maryland	22	21,400	3,000	8,600	33,000
Massachusetts..	16	25,300	6,000	-	31,300
Michigan	3	3,600	-	-	3,600
Missouri	86	15,000	8,400	4,000	27,400
Montana	4	3,300	500	1,500	5,300
New Jersey	44	78,050	10,250	17,200	105,500
New York	11	11,600	-	-	11,600
Ohio	43	39,650	800	15,750	56,200
Oklahoma	181	119,850	9,000	4,000	132,850
Pennsylvania ..	93	104,172	4,900	22,050	131,122
Rhode Island ..	3	6,000	-	-	6,000
South Carolina.	8	5,250	8,750	-	14,000
Texas	273	525,100	47,600	2,600	575,300
Utah	32	6,400	3,800	-	10,200
West Virginia..	9	6,500	800	750	8,050
Wyoming	379	32,516	52,613	-	85,129
U. S., total.	1,868	1,594,990	244,661	111,130	1,950,781

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SURVEY OF CRACKING PLANTS, JANUARY 1, 1931

Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	ARKANSAS				
SD	Houston Oil Co. of Texas	Camden	2	2,000	Dubbs
SD	Kettle Creek Refg. Co.	El Dorado	2	2,000	Dubbs
Op.	Lion Oil Refg. Co.	El Dorado	10	4,500	Burton
Op.	Lion Oil Refg. Co.	El Dorado	1	2,000	Own
SD	Lion Oil Refg. Co.	El Dorado	5	2,250	Burton
SD	Ouachita Valley Refg.Co.	El Dorado	1	800	Dubbs
SD	Root Refg. Co.	El Dorado	2	1,500	Dubbs
Op.	Simms Oil Co.	Smackover	2	2,400	Cross
			25	17,450	
	CALIFORNIA[1]				
Bldg.	Associated Oil Co.	Avon	1	10,000	Tube-and-tank
SD	General Pet. Corp. of Calif.	Los Angeles	2	3,000	Vapor-phase
Op.	Hercules Gasoline Co.	Los Angeles	1	1,250	Jenkins
Op.	Richfield Oil Co. of Calif.	Hynes	4	14,000	Cross
Op.	Richfield Oil Co. of Calif.	Watson	12	16,000	Black
Op.	Rio Grande Oil Co.	Vinvale	2	2,000	Jenkins
Op.	Shell Oil Co.	Dominguez	8	32,000	Dubbs
Op.	Shell Oil Co.	Martinez	8	12,000	Dubbs
Op.	Shell Oil Co.	Martinez	1	4,200	Convertor
Op.	Shell Oil Co.	Watson	8	15,600	Dubbs
Op.	Standard Oil Co. of Calif.	El Segundo	12	36,300	Dubbs
Op.	Standard Oil Co. of Calif.	Richmond	8	18,200	Dubbs
Op.	The Texas Co.	Fillmore	1	2,700	Cross
Op.	The Texas Co.	Watson	3	5,500	Holmes-Manley
Op.	Union Oil Co. of Calif.	Wilmington	4	12,000	Cross
Op.	Union Oil Co. of Calif.	Wilmington	1	6,000	Lientz
Op.	Union Oil Co. of Calif.	Wilmington	1	3,000	Carborundum
			77	193,750	

1/ Data compiled by E. T. Knudsen of the San Francisco Office of the U. S. Bureau of Mines.

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	IOWA				
SD	MonaMotor Oil Co.	E. Omaha	1	1,000	Cross
			1	1,000	
	KANSAS				
Op.	Barnsdall Refineries, Inc.	Wichita	4	1,500	Dubbs
Op.	Derby Oil Co.	Wichita	3	2,500	Dubbs
Op.	The El Dorado Refg. Co.	El Dorado	1	2,000	Winkler-Koch
Op.	Golden Rule Refg. Co.	Wichita	1	1,200	Jenkins
SD	Hutchinson Oil Refg. Co.	Hutchinson	1	750	Trumble
Op.	Independent O. & G. Co. (Phillips)	Kansas City	1	3,000	Dubbs
SD	Kanotex Refg. Co.	Arkansas City	3	3,600	Jenkins
Op.	Kanotex Refg. Co.	Arkansas City	1	2,500	Donnelly
Op.	National Refg. Co.	Coffeyville	1	1,500	Own
SD	The Peerless Oil & Refg. Co. (Altitude)	Chanute	2	2,000	Jenkins
Op.	Shell Pet. Corp.	Arkansas City	8	7,500	Dubbs
SD	Shell Pet. Corp.	Arkansas City	2	2,000	Dubbs
Op.	Sinclair Refg. Co.	Coffeyville	10	13,000	Isom
Op.	Sinclair Refg. Co.	Kansas City	10	13,000	Isom
Op.	Skelly Oil Co.	El Dorado	9	9,000	Jenkins
Op.	Skelly Oil Co.	El Dorado	3	13,000	Pipe stills
SD	Skelly Oil Co.	El Dorado	2	2,500	Skelly-Rittman, vapor-phase
Op.	The Standard Oil Co. (Kans.)	Neodesha	20	12,000	Burton
Op.	The Standard Oil Co. (Kans.)	Neodesha	1	2,500	Holmes-Manley
Op.	Vickers Pet. Co. of Del.	Potwin	2	1,500	Dubbs
Op.	White Eagle Oil Corp.	Augusta	2	8,000	Coil-cracker
			87	104,550	
	KENTUCKY				
Op.	Aetna Oil Service, Inc.	Louisville	1	600	Fleming
Op.	Ashland Refg. Co.	Leach	1	1,000	Dubbs
Op.	Latonia Refg. Co.	Latonia	1	2,380	Tube-and-tank
Bldg.	Latonia Refg. Co.	Latonia	1	2,380	Tube-and-tank
Op.	Louisville Refg. Co.Inc.	Louisville	2	2,000	Dubbs
Op.	Standard Oil Co. (Ky.)	Louisville	30	7,500	Burton
Op.	The Texas Co.	Pryse	1	2,000	Holmes-Manley
			37	17,860	

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	LOUISIANA				
Op.	Chalmette Pet. Corp.	Chalmette	1	2,000	Winkler-Koch
SD	Crystal Oil Refg. Corp.	Cedar Grove	2	3,400	Jenkins
Op.	Louisiana Oil Refg. Corp.	Bossier City	4	6,400	Tube-and-tank
Op.	Louisiana Oil Refg. Corp.	Bossier City	5	7,100	Louisiana coil
Op.	Shell Pet. Corp.	Norco	4	7,000	Dubbs
SD	Shell Pet. Corp.	Norco	2	3,000	Dubbs
Op.	Shreveport-Eldorado Pipe Line Co., Inc.	Shreveport	2	2,000	Dubbs
SD	Shreveport-Eldorado Pipe Line Co., Inc.	Shreveport	1	1,000	Jenkins
Op.	Standard Oil Co. of La.	Baton Rouge	20	40,000	Link
Bldg.	Standard Oil Co. of La.	Baton Rouge	2	6,000	Link
Op.	Standard Oil Co. of La.	Baton Rouge	8	10,000	Tube-and-tank
Op.	Standard Oil Co. of La.	Baton Rouge	2	5,000	Cross
Op.	Stanolind Oil & Gas Co.	Superior	1	2,000	Cross
			54	94,900	
	MARYLAND				
Op.	Continental Oil Co.	Baltimore	2	4,000	Cross
Op.	Continental Oil Co.	Baltimore	4	2,400	Dubbs
SD	Interocean Oil Co.	Baltimore	2	1,000	Dubbs
SD	Interocean Oil Co.	Baltimore	4	2,000	Leamon
Op.	Standard Oil Co. of N.J.	Baltimore	8	15,000	Tube-and-tank
Bldg.	Standard Oil Co. of N.J.	Baltimore	2	8,600	Tube-and-tank
			22	33,000	
	MASSACHUSETTS				
Op.	Cities Service Refg. Co.	E. Braintree	2	4,500	Doherty
SD	Cities Service Refg. Co.	E. Braintree	2	1,800	Holmes-Manley
Op.	Colonial Beacon Oil Co., Inc.	Everett	10	20,800	Tube-and-tank
SD	Colonial Beacon Oil Co., Inc.	Everett	2	4,200	Tube-and-tank
			16	31,300	
	MICHIGAN				
Op.	White Star Refg. Co.	Trenton	3	3,600	Dubbs
			3	3,600	

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	MISSOURI				
SD	Joplin Refg. Co.	Joplin	1	1,000	Jenkins
Op.	Standard Oil Co. (Ind.)	Sugar Creek	20	7,000	Burton
SD	Standard Oil Co. (Ind.)	Sugar Creek	60	7,400	Burton
Op.	Standard Oil Co. (Ind.)	Sugar Creek	4	8,000	Holmes-Manley
Bldg.	Standard Oil Co. (Ind.)	Sugar Creek	1	4,000	Holmes-Manley
			86	27,400	
	MONTANA				
SD	Arro Oil & Refg. Co.	Lewistown	1	500	Dubbs
Op.	Hart Refineries	Missoula	1	300	Own
Op.	International Refg. Co.	Sunburst	1	3,000	de Florez
Bldg.	Laurel Oil & Refg. Co.	Laurel	1	1,500	Donnelly
			4	5,300	
	NEW JERSEY				
Op.	The Bertrin Pet. Co.	Maurer	1	3,000	Cross
Op.	Eastern Oil Processing Co.	Petty Island	2	3,000	Doherty
Op.	Gulf Refg. Co.	Bayonne	1	800	de Florez
Op.	Standard Oil Co. of N.J.	Bayonne, etc.	20	54,050	Tube-and-tank
SD	Standard Oil Co. of N.J.	Bayonne, etc.	6	10,250	Tube-and-tank
Bldg.	Standard Oil Co. of N.J.	Bayonne, etc.	4	17,200	Tube-and-tank
Op.	Tide Water Oil Co.	Bayonne	4	10,700	Tube-and-tank
Op.	Vacuum Oil Co.	Paulsboro	3	3,500	Cross
Op.	Vacuum Oil Co.	Paulsboro	3	3,000	Tube-and-tank
			44	105,500	
	NEW YORK				
Op.	Standard Oil Co. of N.Y.	Brooklyn & L.I. City	6	8,000	Cross
Op.	Standard Oil Co. of N.Y.	Buffalo	2	2,000	Cross
Op.	Vacuum Oil Co.	Olean	2	1,000	Cross
Op.	Vacuum Oil Co.	Olean	1	600	Tube-and-tank
			11	11,600	

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	OHIO				
SD	Allegheny-Arrow Oil Co.	Canton	1	800	Dubbs
Bldg.	Gulf Refg. Co.	Cleves	2	6,000	Own
Bldg.	Gulf Refg. Co.	Toledo	2	6,000	Own
Bldg.	The Independent Producers Refg. Co.	Logan	1	750	Dubbs
Op.	National Refg. Co.	Findlay	1	1,000	Own
Op.	National Refg. Co.	Marietta	1	1,000	Own
Op.	The Pure Oil Co.	Heath	2	4,000	Cross
Op.	The Pure Oil Co.	Heath	4	3,000	Gyro
Bldg.	The Pure Oil Co.	Toledo	3	3,000	Gyro
Op.	The Solar Refg. Co.	Lima	2	2,000	Cross
Op.	The Solar Refg. Co.	Lima	15	4,000	Burton
Op.	Standard Oil Co. of Ohio	Cleveland	4	9,600	Tube-and-tank
Op.	Standard Oil Co. of Ohio	Toledo	2	4,800	Tube-and-tank
Op.	The Stellar Refg. Co.	Marne	1	250	Leamon
Op.	Sun Oil Co. 1/	Toledo	2	10,000	Own
			43	56,200	
	OKLAHOMA				
Op.	Anderson-Prichard Refg. Corp.	Cyril	1	3,500	Winkler-Koch
Op.	Barnsdall Refineries, Inc.	Okmulgee	2	4,500	Cross
Op.	Barnsdall Refineries, Inc.	Barnsdall	3	4,000	Cross
Op.	Beckett Co., Inc.	Beckett	1	2,000	Jenkins
Op.	Bell Oil & Gas Co.	Grandfield	1	1,000	Dubbs
Op.	Bilmont Refg. Co.	Garber	1	1,000	Jenkins
Op.	Champlin Refg. Co.	Enid	1	3,500	Winkler-Koch
SD	Champlin Refg. Co.	Enid	1	2,000	Cross
Op.	Continental Oil Co.	Ponca City	2	7,000	Cross
Op.	Continental Oil Co.	Ponca City	6	9,000	Dubbs
Op.	Continental Oil Co.	Sapulpa	6	1,500	Cross
Op.	Deep Rock Oil Corp.	Cushing	5	3,800	Dubbs
Op.	Eason Oil Co.	Enid	2	2,000	Jenkins
Op.	Empire Oil & Refg. Co.	Okmulgee	1	1,000	Doherty
SD	Empire Oil & Refg. Co.	Cushing	2	1,500	Doherty
Op.	Empire Oil & Refg. Co.	Ponca City	3	2,500	Doherty
Op.	Empire Oil & Refg. Co.	Ponca City	2	2,000	Dubbs
Op.	The Globe Oil & Refg.Co.	Blackwell	1	1,000	Cross
Op.	The Globe Oil & Refg.Co.	Blackwell	1	3,000	Winkler-Koch
SD	The Globe Oil & Refg.Co.	Cushing	2	3,500	Jenkins

1/ Estimated.

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	OKLAHOMA (Continued)				
Bldg.	Illinois Oil Co.	Cushing	1	1,500	Donnelly
SD	Imperial Refg. Co.	Ardmore	4	2,000	Dubbs
Op.	Independent Oil & Gas Co. (Phillips)	Okmulgee	1	3,000	Dubbs
Op.	Johnson Oil Refg. Co.	Cleveland	4	3,000	Dubbs
Op.	Marathon Oil Co.	Boynton	6	900	Slagter
Op.	Marathon Oil Co.	Bristow	3	450	Slagter
Op.	Mid-Continent Pet. Corp.	W. Tulsa	75	15,000	Own
Op.	Producers & Refiners Corp.	W. Tulsa	6	3,000	Dubbs
Op.	The Pure Oil Co.	Ardmore	4	2,000	Dubbs
Op.	The Pure Oil Co.	Muskogee	2	4,000	Cross
Op.	The Pure Oil Co.	Muskogee	2	1,000	Gyro
Op.	Rock Island Refg. Co.	Beckett	1	1,800	Winkler-Koch
Op.	Sinclair Refg. Co.	Sand Springs	4	4,000	Cross
Op.	The Texas Co.	W. Tulsa	9	15,000	Holmes-Manley
Op.	The Texas Co.	W. Tulsa	2	2,500	Pressure-coke
Bldg.	The Texas Co.	W. Tulsa	2	2,500	Pressure-coke
Op.	Texas Pacific Coal & Oil Co.	Wynnewood	2	900	Dubbs
Op.	Tidal Refg. Co.	Drumright	2	5,000	Tube-and-tank
Op.	Tidal Refg. Co.	Drumright	5	2,500	Burton
Op.	White Oak Refg. Co.	Allen	1	2,000	Jenkins
Op.	Wilcox Oil & Gas Co.	Bristow	1	1,500	Dubbs
			181	132,850	
	PENNSYLVANIA				
Op.	The Atlantic Refg. Co.	Pittsburgh	2	4,000	Cross
Op.	The Atlantic Refg. Co.	Franklin	6	6,000	Cross
Op.	The Atlantic Refg. Co.	Philadelphia	10	20,000	Cross
Op.	The Atlantic Refg. Co.	Philadelphia	2	2,600	Lewis
SD	Butler County Oil Refg. Co.	Bruin	3	900	Snodgrass
SD	Conewango Refg. Co.	Langdale	2	500	Snodgrass
Bldg.	Emlenton Refg. Co.	Emlenton	1	750	Dubbs
SD	The Freedom Oil Works Co.	Coraopolis	1	500	Dubbs
SD	General Benzol Corp.	Warren	4	1,000	Ormont
Bldg.	Gulf Refg. Co.	Neville Island	1	3,000	Own
Op.	Gulf Refg. Co.	Philadelphia	4	8,000	Own
Op.	Independent Refg. Co.	Oil City	4	1,792	Snodgrass
Op.	Kendall Refg. Co.	Bradford	2	1,000	Dubbs

1/ Estimated.

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	PENNSYLVANIA (Continued)				
SD	Penn. Oil Products Refg. Co.	Eldred	2	1,000	Snodgrass
Op.	The Pennzoil Co.	Rouseville	2	2,000	Dubbs
Bldg.	The Pennzoil Co.	Rouseville	1	1,000	Dubbs
Op.	The Pure Oil Co.	Marcus Hook	4	8,000	Cross
Op.	The Pure Oil Co.	Marcus Hook	3	3,000	Gyro
Op.	Sinclair Refg. Co.	Marcus Hook	20	20,000	Isom
Bldg.	Sinclair Refg. Co.	Marcus Hook	4	17,300	Isom
Op.	Sun Oil Co. 1/	Marcus Hook	10	25,000	Own
Op.	Valvoline Oil Co.	E. Butler	3	780	Snodgrass
SD	Waverly Oil Works Co.	Pittsburgh	1	1,000	Cross
Op.	Waverly Oil Works Co.	Coraopolis	1	2,000	Cross
			93	131,122	
	RHODE ISLAND				
Op.	Standard Oil Co. of N.Y.	E. Providence	3	6,000	Cross
			3	6,000	
	SOUTH CAROLINA				
Op.	Standard Oil Co. of N.J.	Charleston	3	5,250	Tube-and-tank
SD	Standard Oil Co. of N.J.	Charleston	5	8,750	Tube-and-tank
			8	14,000	
	TEXAS				
Op.	American Refg. Properties	Wichita Falls	2	1,800	Dubbs
Op.	American Refg. Properties	Wichita Falls	1	1,000	Cross
Op.	Atlantic-Pacific & Gulf Refg. Co.	Wichita Falls	1	3,000	Jenkins
SD	Burford Oil Co.	Pecos	2	5,000	Jenkins
Op.	Col-Tex Refg. Co.	Colorado	1	3,000	Richmond
Op.	Continental Oil Co.	Wichita Falls	2	2,000	Own
Op.	Cosden Oil Co.	Big Spring	4	6,600	Jenkins
Op.	Crown Oil & Refg. Co.	Pasadena	3	5,000	Holmes-Manley
Op.	Empire Oil & Refg. Co.	Gainesville	2	2,000	Dubbs
Op.	Grayburg Oil Co.	San Antonio	2	900	Dubbs
Op.	Gulf Refg. Co.	Sweetwater	2	4,000	Own
Op.	Gulf Refg. Co.	Ft. Worth	6	4,200	Own
Op.	Gulf Refg. Co.	Port Arthur	47	68,000	Own
SD	Humble Oil & Refg. Co.	Baytown	2	15,000	Cross
Op.	Humble Oil & Refg. Co.	Baytown	20	143,000	Tube-and-tank
Op.	Humble Oil & Refg. Co.	Ingleside	2	15,000	Tube-and-tank
Op.	Humble Oil & Refg. Co.	McCamey	2	15,000	Tube-and-tank

1/ Estimated.

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	TEXAS (Continued)				
Op.	Iowa Park Producing & Refg. Co.	Iowa Park	1	1,200	Jenkins
SD	LaSalle Pet. Co.	Burkburnett	1	1,800	Jenkins
Op.	Magnolia Pet. Co.	Beaumont	20	55,000	Cross
Op.	Magnolia Pet. Co.	Ft. Worth	1	750	Controlled coil
Op.	Magnolia Pet. Co.	Ft. Worth	1	3,000	Cross
Op.	Magnolia Pet. Co.	Luling	1	3,750	Controlled coil
Op.	Marathon Oil Co.	Ft. Worth	9	1,350	Slagter
Op.	Misko Refineries, Inc.	Mirando	1	1,000	Own
SD	Motor Fuel Products Co.	Laredo	1	2,000	Jenkins
Op.	Panhandle Refg. Co.	Wichita Falls	2	1,200	Dubbs
Op.	Pasotex Pet. Co.	El Paso	1	3,400	Richmond
SD	Petroleum Conversion Corp.	Texas City	1	600	True vapor-phase
Op.	Phillips Pet. Co.	Borger	6	7,500	Own
Op.	The Pure Oil Co.	Nederland	26	13,000	Cross
Op.	The Pure Oil Co.	Nederland	3	3,000	Gyro
SD	Richardson Refg. Co.	Big Spring	2	5,000	Jenkins
Op.	Shell Pet. Corp.	Houston	6	12,000	Dubbs
Op.	Simms Oil Co.	W. Dallas	2	3,600	Cross
Op.	Sinclair Refg. Co.	Houston	23	30,400	Isom
SD	Sinclair Refg. Co.	Houston	5	18,000	Isom
Bldg.	Sinclair Refg. Co.	Houston	2	2,600	Isom
SD	Star Refg. & Prod. Co.	Ft. Worth	1	200	Fleming
Op.	Stone Oil Co.	Texas City	1	1,800	Jenkins
Op.	Taxman Refg. Co.	Wichita Falls	1	1,500	Donnelly
Op.	The Texas Co.	Amarillo	1	1,250	de Florez
Op.	The Texas Co.	Amarillo	1	1,500	Pressure-coke
Op.	The Texas Co.	El Paso	1	1,500	Holmes-Manley
Op.	The Texas Co.	San Antonio	2	3,000	Holmes-Manley
Op.	The Texas Co.	Houston	1	1,000	Tube-and-tank
Op.	The Texas Co.	Port Arthur	38	80,000	Holmes-Manley
Op.	The Texas Co.	Port Arthur	1	2,500	de Florez
Op.	The Texas Co.	Port Arthur	2	5,000	Pressure-coke
Op.	The Texas Co.	W. Dallas	2	3,600	Holmes-Manley
Op.	The Texas Co.	W. Dallas	1	3,000	de Florez
Op.	The Texas Co.	W. Dallas	3	4,000	Pressure-coke
Op.	Texas Pacific Coal & Oil Co.	Ft. Worth	1	800	Cross
			273	575,300	

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Status	Company	Location	Number of units	Total daily charging capacity, barrels	Type of process
	UTAH				
SD	Utah Oil Refg. Co.	N. Salt Lake City	30	3,800	Burton
Op.	Utah Oil Refg. Co.	N. Salt Lake City	2	6,400	Holmes-Manley
			32	10,200	
	WEST VIRGINIA				
Op.	Carbide & Carbon Chemicals Corp.	S.Charleston	1	800	Gyro
SD	Carbide & Carbon Chemicals Corp.	S.Charleston	1	800	Gyro
Bldg.	Ohio Valley Refg. Co.	St. Marys	1	750	Dubbs
Op.	The Pure Oil Co.	Cabin Creek	3	1,400	Gyro
Op.	Standard Oil Co. of N.J.	Parkersburg	2	2,500	Tube-and-tank
Op.	Tri-State Refg. Co.	Kenova	1	1,800	Jenkins
			9	8,050	
	WYOMING				
Op.	Continental Oil Co.	Glenrock	6	1,988	Burton
SD	Continental Oil Co.	Glenrock	9	1,736	Burton
SD	Egaso Operating Co.	Osage	1	1,000	Cross
SD	Midwest Refg. Co.	Casper	40	6,200	Burton
Op.	Midwest Refg. Co.	Greybull	20	2,740	Burton
SD	Midwest Refg. Co.	Greybull	20	2,740	Burton
Op.	Midwest Refg. Co.	Laramie	13	2,106	Burton
SD	Midwest Refg. Co.	Laramie	7	1,134	Burton
Op.	Producers & Refiners Corp.	Parco	6	3,600	Dubbs
Op.	Standard Oil Co. (Ind.)	Casper	26	9,282	Burton
SD	Standard Oil Co. (Ind.)	Casper	221	38,603	Burton
Op.	The Texas Co.	Casper	4	4,800	Holmes-Manley
SD	The Texas Co.	Casper	1	1,200	Holmes-Manley
Op.	The Texas Co.	Casper	1	1,500	Pressure-coke
Op.	The Texas Co.	Cody	1	1,500	Holmes-Manley
Op.	White Eagle Oil Corp.	Casper	1	1,500	Holmes-Manley
Op.	White Eagle Oil Corp.	Casper	1	2,500	Own
Op.	White Eagle Oil Corp.	Casper	1	1,000	Jenkins
			379	85,129	

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